

## EVALUATING STEREOACUITY ACCORDING TO THE DEGREES OF MANIFEST HYPERMETROPIA IN FULLY ACCOMMODATIVE ESOTROPIA

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### **Abstract**

#### **Introduction**

Fully accommodative esotropia (FAE), characterized by intermittent inward deviation of the eyes corrected with spectacles, poses challenges in understanding its underlying mechanisms, especially regarding stereoacuity. Manifest hypermetropia, comprising absolute and facultative hyperopia, is pivotal in FAE diagnosis and management. Stereoacuity, indicative of sensory binocularity, remains a focal point for understanding visual function in FAE.

#### **Objective**

This research aims to explore the relationship between varying degrees of manifest hypermetropia and stereoacuity levels in FAE patients, to enlighten potential correlations and implications for clinical management.

#### **Methodology**

This study is a cross-sectional retrospective study conducted at the Orthoptic Unit – Vision Care Pvt Ltd Union Place branch included 61 FAE patients aged 7-18 years. Diagnostic criteria encompassed Manifest Hypermetropia Degree of Both Eyes, Near Angle of Deviation, Age, and Stereoacuity. The Spherical Equivalent of the highest hypermetropia degree was utilized for data analysis. Subjective refraction with Fogging determined manifest hyperopia, while orthoptic assessment diagnosed FAE. Binocular function evaluation, including stereopsis, fusion, and vergence, was performed with and without correction to assess the impact of hypermetropia on binocular vision. The Cover Test findings were used to diagnose FAE. With correction, the presence of orthophoria or esophoria indicates successful alignment of the eyes when the hypermetropia is corrected. However, without correction, the manifestation of esotropia suggests inward deviation of the eyes when not corrected, signifying FAE.

Results: Analysis with the required sample size revealed a significant medium positive relationship between manifest hypermetropia degree and stereoacuity. Pearson Correlation test indicated a correlation coefficient of 0.408 ( $p = 0.001217$ ), suggesting that as the degree of manifest hypermetropia increased, stereoacuity values increased, indicating the reduction of stereoacuity.

#### **Conclusion**

In conclusion, the study highlights a significant positive relationship between the degree of manifest hypermetropia and stereoacuity in individuals with fully accommodative esotropia. The findings suggest that addressing refractive error may play a crucial role in improving stereopsis in such patients.

<https://journal.vcacademy.lk/articles/evaluating-stereoacuity-according-to-the-degrees-of-manifest-hypermetropia-in-fully-accommodative-esotropia>